

## ABSTRACT

The adaptive artificial vision method comprises the following steps: (a) defining successive couples of timesteps ( $t_{-1}, t$ ;  $t, t_{+1}; \dots$ ) synchronized by a clock (101), (b) comparing two successive images ( $I_{t-1}, I_t$ ;  $I_t, I_{t+1}, \dots$ ) from an input device (102, 103) at each couple of synchronized timesteps ( $t_{-1}, t$ ;  $t, t_{+1}; \dots$ ) spaced by a predetermined time delay  $\tau_0$  for obtaining a delta image  $\Delta_t$  which is the result of the computation of the distance between each pixel of the two successive images ( $I_{t-1}, I_t$ ;  $I_t, I_{t+1}, \dots$ ) in view of characterizing movements of objects, (c) extracting features from the delta image  $\Delta_t$  for obtaining a potential dynamic patch  $P_t$  which is compared with dynamic patches previously recorded in a repertory which is progressively constructed in real time from an initial void repertory, (d) selecting the closest dynamic patch  $D_i$  in the repertory or if no sufficiently close dynamic patch still exists, adding the potential dynamic patch  $P_t$  to the repertory and therefore obtaining and storing a dynamic patch  $D_i$  from the comparison of two successive images ( $I_{t-1}, I_t$ ;  $I_t, I_{t+1}, \dots$ ) at each couple of synchronized timesteps ( $t_{-1}, t$ ;  $t, t_{+1}; \dots$ ), and (e) temporally integrating stored dynamic patches  $D_i$  of the repertory in order to detect and store stable sets of active dynamic patches representing a characterization of a reoccurring movement or event which is observed. A process of static pattern recognition may then be efficiently used.

(Figure 7)